

# EN380 - Naval Materials Science and Engineering

Fall 2003

Schedule

Rev -

Week	Day	Month	Topic	Reading Assignment
1	20	August	Course Overview /Materials Characterization	1.1-1.3.4
	22	August	Marine Environment Effects	2.1-2.2.2
2	25	August	Corrosion Types and Corrosion Cell	19.1-19.3.2
	27	August	Concentration Cell Variations	19.3.3-19.3.8
	29	August	Anode/Cathode Areas	
3	1	September	Labor Day!	
	3	September	Lab1: Galvanic Series	
	5	September	Polarization Diagrams	19.6-19.6.2
4	8	September	Corrosion Rates/Weight Loss	
	10	September	Lab 2: Area Effects	
	12	September	Protection Systems	19.7-19.7.4
5	15	September	Stress Corrosion and Marine Corrosion Tables	19.5
	17	September	Lab 3: Polarization	
	19	September	Exam 1	
6	22	September	Crystals	3.2.6-3.6.5
	24	September	Pure Materials and Alloys	3.7-3.7.4, 7.1-7.4.1,7.5-7.5.1.2
	26	September	Phase Equilibrium	8.1-8.6.3
7	29	September	Phase Diagrams	
	1	October	Iron-Carbon Phase Diagrams	9.1-9.1.7
	3	October	Heat Treatments of Steels	9.2-9.5.5
8	6	October	Heat Treatments of Steels	
	8	October	Lab 4: Phase Diagram	9.8-9.9.3
	10	October	Bock lecture comp time	
9	13	October	Columbus Day!	
	15	October	Steel Alloys	10.1-10.8.4
	17	October	Copper and Aluminum Alloys	11.1-11.3.4
10	20	October	Mag., Nickel, Zinc, Titanium Alloys	11.4-11.8.2
	22	October	Polymers	12.1-12.11.8
	24	October	Ceramics	13.1-13.4.5
11	27	October	Material Design Problem	
	29	October	Exam 2	
	31	October	Non-Isotropic Material Theory	
12	3	November	Concrete	13.5-13.5.4.3, 14.6.8
	5	November	Composites	14.1-14.4.1
	7	November	Wood	handout
13	10	November	Elastic Stress and Strain	4.1-4.1.4
	12	November	Plastic Stress and Strain	4.1.5-4.1.9
	14	November	Failure Criteria/Combined Stress	5.1-5.8.3
14	17	November	Fracture Mechanics and Creep	16.1-16.4.4
	19	November	Fatigue	16.5-16.5.7
	21	November	Fatigue	
15	24	November	Lab 5: Fatigue Testing	
	26	November	Movies - Greatest Material Failures	
	28	November	Thanksgiving Break!	
16	1	December	Shaping Processes	6.1-6.5.2.4
	3	December	Exam 3	
	5	December	Final Presentation/Review	